

5 CLAIMS

WHAT IS CLAIMED IS:

1. An isolated nucleic acid molecule comprising a polynucleotide having a nucleotide sequence at least 95% identical to a sequence selected from the group consisting of:
 - 10 (a) a polynucleotide fragment of SEQ ID NO:1 or a polynucleotide fragment of the cDNA sequence included in ATCC Deposit No: PTA-2676, which is hybridizable to SEQ ID NO:1;
 - (b) a polynucleotide encoding a polypeptide fragment of SEQ ID NO:2 or a polypeptide fragment encoded by the cDNA sequence included in ATCC Deposit No:
 - 15 PTA-2676, which is hybridizable to SEQ ID NO:1;
 - (c) a polynucleotide encoding a polypeptide domain of SEQ ID NO:2 or a polypeptide domain encoded by the cDNA sequence included in ATCC Deposit No: PTA-2676, which is hybridizable to SEQ ID NO:1;
 - (d) a polynucleotide encoding a polypeptide epitope of SEQ ID NO:2 or a
 - 20 polypeptide epitope encoded by the cDNA sequence included in ATCC Deposit No: PTA-2676, which is hybridizable to SEQ ID NO:1;
 - (e) a polynucleotide encoding a polypeptide of SEQ ID NO:2 or the cDNA sequence included in ATCC Deposit No: PTA-2676, which is hybridizable to SEQ ID NO:1, having caspase binding activity;
 - 25 (f) a polynucleotide which is a variant of SEQ ID NO:1;
 - (g) a polynucleotide which is an allelic variant of SEQ ID NO:1;
 - (h) an isolated polynucleotide comprising nucleotides 1323 to 2666 of SEQ ID NO:1, wherein said nucleotides encode a polypeptide corresponding to amino acids 2 to 449 of SEQ ID NO:2 minus the start codon;
 - 30 (i) an isolated polynucleotide comprising nucleotides 1320 to 2666 of SEQ ID NO:1, wherein said nucleotides encode a polypeptide corresponding to amino acids 1 to 449 of SEQ ID NO:2 including the start codon;
 - (j) a polynucleotide which represents the complementary sequence (antisense) of SEQ ID NO:1; and
 - 35 (k) a polynucleotide capable of hybridizing under stringent conditions to any one of the polynucleotides specified in (a)-(j), wherein said polynucleotide does not

- 5 hybridize under stringent conditions to a nucleic acid molecule having a nucleotide sequence of only A residues or of only T residues.
2. The isolated nucleic acid molecule of claim 1, wherein the polynucleotide fragment comprises a nucleotide sequence encoding a human leucine-rich repeat protein.
- 10 3. A recombinant vector comprising the isolated nucleic acid molecule of claim 1.
4. A recombinant host cell comprising the vector sequences of claim 3.
5. An isolated polypeptide comprising an amino acid sequence at least 95% identical to a sequence selected from the group consisting of:
 - 15 (a) a polypeptide fragment of SEQ ID NO:2 or the encoded sequence included in ATCC Deposit No: PTA-2676;
 - (b) a polypeptide fragment of SEQ ID NO:2 or the encoded sequence included in ATCC Deposit No: PTA-2676, having caspase binding activity;
 - (c) a polypeptide domain of SEQ ID NO:2 or the encoded sequence included
 - 20 in ATCC Deposit No: PTA-2676;
 - (d) a polypeptide epitope of SEQ ID NO:2 or the encoded sequence included in ATCC Deposit No: PTA-2676;
 - (e) a full length protein of SEQ ID NO:2 or the encoded sequence included in ATCC Deposit No: PTA-2676;
 - 25 (f) a variant of SEQ ID NO:2;
 - (g) an allelic variant of SEQ ID NO:2;
 - (h) a species homologue of SEQ ID NO:2;
 - (i) a polypeptide comprising amino acids 2 to 449 of SEQ ID NO:2, wherein said amino acids 2 to 449 comprise a polypeptide of SEQ ID NO:2 minus the start
 - 30 methionine;
 - (j) a polypeptide comprising amino acids 1 to 449 of SEQ ID NO:2; and
 - (k) a polypeptide encoded by the cDNA contained in ATCC Deposit No. PTA-2676.
 6. The isolated polypeptide of claim 5, wherein the full length protein
 - 35 comprises sequential amino acid deletions from either the C-terminus or the N-terminus.

- 5 7. An isolated antibody that binds specifically to the isolated polypeptide of claim 5.
8. A recombinant host cell that expresses the isolated polypeptide of claim 15
9. A method of making an isolated polypeptide comprising:
 - 10 (a) culturing the recombinant host cell of claim 8 under conditions such that said polypeptide is expressed; and
 - (b) recovering said polypeptide.
10. The polypeptide produced by claim 9.
11. A method for preventing, treating, or ameliorating a medical condition,
 - 15 comprising the step of administering to a mammalian subject a therapeutically effective amount of the polypeptide of claim 5 or the polynucleotide of claim 1.
12. A method of diagnosing a pathological condition or a susceptibility to a pathological condition in a subject comprising:
 - (a) determining the presence or absence of a mutation in the polynucleotide of
 - 20 claim 1; and
 - (b) diagnosing a pathological condition or a susceptibility to a pathological condition based on the presence or absence of said mutation.
13. A method of diagnosing a pathological condition or a susceptibility to a pathological condition in a subject comprising:
 - 25 (a) determining the presence or amount of expression of the polypeptide of claim 5 in a biological sample; and
 - (b) diagnosing a pathological condition or a susceptibility to a pathological condition based on the presence or amount of expression of the polypeptide.
14. A process for making polynucleotide sequences encoding a gene
 - 30 product having altered caspase binding activity comprising,
 - a) shuffling a nucleotide sequence of claim 1,
 - b) expressing the resulting shuffled nucleotide sequences and,
 - c) selecting for altered caspase binding activity as compared to the caspase binding activity of the gene product of said unmodified nucleotide sequence.
15. A shuffled polynucleotide sequence produced from the process of claim 14.

- 5 16. An isolated nucleic acid molecule comprising a polynucleotide having a nucleotide sequence selected from the group consisting of:
- (a) a polynucleotide encoding a polypeptide of SEQ ID NO:2;
- (b) an isolated polynucleotide comprising nucleotides 1323 to 2666 of SEQ ID NO:1, wherein said nucleotides encode a polypeptide corresponding to amino
- 10 acids 2 to 449 of SEQ ID NO:2 minus the start codon;
- (c) an isolated polynucleotide comprising nucleotides 1320 to 2666 of SEQ ID NO:1, wherein said nucleotides encode a polypeptide corresponding to amino acids 2 to 449 of SEQ ID NO:2 including the start codon;
- (d) a polynucleotide encoding the HLRRBM1 polypeptide encoded by
- 15 the cDNA clone contained in ATCC Deposit No. PTA-2676; and
- (e) a polynucleotide which represents the complimentary sequence (antisense) of SEQ ID NO:41.
- 20 17. The isolated nucleic acid molecule of claim 16, wherein the polynucleotide comprises a nucleotide sequence encoding a human leucine-rich repeat protein.
- 25 18. A recombinant vector comprising the isolated nucleic acid molecule of claim 16.
19. A recombinant host cell comprising the recombinant vector of claim 18.
20. An isolated polypeptide consisting of an amino acid sequence selected from the group consisting of:
- (a) a polypeptide fragment of SEQ ID NO:2 having caspase binding activity;
- (b) a polypeptide domain of SEQ ID NO:2 having caspase binding
- 30 activity;
- (c) a full length protein of SEQ ID NO:2;
- (d) a polypeptide corresponding to amino acids 2 to 449 of SEQ ID NO:2, wherein said amino acids 2 to 449 comprise a polypeptide of SEQ ID NO:2 minus the start methionine;
- 35 (e) a polypeptide corresponding to amino acids 1 to 449 of SEQ ID NO:2; and

- 5 (f) a polypeptide encoded by the cDNA contained in ATCC Deposit No. PTA-2676.
21. The method for preventing, treating, or ameliorating a medical condition of claim 11, wherein the medical condition is a proliferative disorder.
22. The method for preventing, treating, or ameliorating a medical
10 condition of claim 11, wherein the medical condition is an immune condition.
23. The method for preventing, treating, or ameliorating a medical condition of claim 11, wherein the medical condition is disorder related to aberrant apoptosis modulation, either directly or indirectly.